

Appl. No. 10/815,201

Attorney Docket No.: N1280-00180 (TSMC2003-1083)

Reply dated: 03/23/2006

Response to Office Action of: 01/25/2006

REMARKS/ARGUMENTS

Claims 1-31 are pending in this application. Claims 1-25 were rejected and claims 26-31 withdrawn from consideration. Claims 1, 8 and 15 are hereby amended and claim 2 cancelled.

- 5 First and foremost, Applicants take this opportunity to thank Examiner Fenty for discussing the claimed invention in a telephonic Examiner interview with Applicants' undersigned representative, Mark J. Marcelli, that took place on March 14, 2006.

Applicants respectfully request re-examination, reconsideration and allowance of each of presently pending claims 1 and 3-25.

10 I. **Rejection of Claims 1-5 and 8-25 Under 35 U.S.C. § 103**

In paragraph 2 of the Office Action, claims 1-5 and 8-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chan et al. (USPN 5,187,114), hereinafter "Chan '114", in view of Chan et al. (USPN 5,795,800), hereinafter "Chan '800" and further in view of Matsumoto, et al. (US 2003/0153136 A1), hereinafter "Matsumoto."

- 15 Applicants respectfully submit that these claim rejections are overcome for reasons set forth below and as discussed in the March 14, 2006 telephonic Examiner interview.

Claims 1, 8 and 15 are the independent claims of the above-identified rejected claim set and each of claims 1, 8 and 15 have been amended.

- 20 *Amended claim 1 recites the feature of: "the silicide layer is a continuous layer including a junction covering the dielectric edge portion and consisting of a first silicide film formed of silicon from the gate interconnect layer and a second silicide film formed of silicon from the active region."

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*Similarly, independent claim 8 recites the feature of: "the continuous silicide layer consists of a first silicide film formed of silicon from the active region and a second silicide film formed of silicon from the gate interconnect layer."

*Amended independent claim 15 recites the feature of: "wherein the sidewall butted connection structure is a continuous silicide layer including a junction covering a dielectric edge portion between the active region and the gates of the two transistors and consists of a first silicide film formed of silicon from the single crystal active region and a second silicide film formed of silicon from the gates."

The Office action only alleges that Chan '114 teaches a silicide layer which is "a sidewall butted connection structure that bridges a dielectric edge portion (12) separating the gate interconnect structure from the active region," subject Office Action, page 2, lines 18-19. Chan '800 and Matsumoto are not cited for, and do not disclose, such a silicide film. Applicants respectfully submit that layer 36 of Chan '114 does not include the above-identified claimed features because layer 36 of Chan '114, cited in the subject Office Action, *is not formed of silicon from multiple sources* such as recited in each of claims 1, 8 and 15.

Chan '114 discloses, in column 3, lines 34-38: "A metal-containing layer 36 is deposited over the surface of the integrated circuit. Layer 36 is preferably a refractory metal or a refractory metal silicide such as tantalum or tantalum silicide, respectively. Metal layer 36 is deposited by sputtering. The metal containing layer 36 is then patterned and etched" Layer 36 is therefore a metal-containing film. Even in the exemplary embodiment in which the metal-containing layer is a silicide, the silicide is formed by sputtering a film onto a surface. Chan '114 provides no suggestion of any subsequent silicidation process. Hence, any silicon in the silicide film originates from the sputtering target, not any underlying material already on the surface of the integrated circuit as in the claimed invention. Moreover, if a silicide is even present in Chan '114, any portion of a silicide film bridging the gap, is present because an exemplary silicon film was deposited on the gap, not due to the formation of a film using

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silicon from two sources. This is as discussed in the telephonic Examiner interview of March 14, 2006 and Applicants respectfully submit that the claimed features are therefore not disclosed or suggested in Chan '114 and that therefore independent claims 1, 8 and 15 are distinguished from the reference of Chan '114.

5 Dependent claims 3-7, 9-14 and 16-25 are also similarly distinguished from Chan '114. Neither Chan '800 nor Matsumoto discloses this feature as acknowledged by the Examiner since neither of these references were relied upon for teaching or suggesting such a feature.

10 Claim 2 has been cancelled and, for reasons set forth above, the rejection of claims 1, 3-5 and 8-25 under 35 U.S.C. § 103(a), should be withdrawn.

II. Rejection of Claims 6 and 7 Under 35 U.S.C. § 103

15 In paragraph 3 of the Office Action, claims 6 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chan '114/Chan '800 as applied to claim 1 and further in view of Chan (USPN 4,569,112), hereinafter "Chan '112". Applicants respectfully submit that these claim rejections are overcome for reasons set forth below.

20 Chan '112 has apparently been relied upon for providing thicknesses of the silicide layer referred to in claims 6 and 7, but does not make up for the above-stated deficiencies of the combination of Chan '114/Chan '800. Claims 6 and 7 depend from claim 1 which is distinguished from the references of Chan '114 and Chan '800, taken alone or in combination and therefore the rejection of claims 6 and 7 under 35 U.S.C. § 103(a), should also be withdrawn.

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CONCLUSION

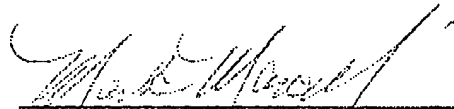
Applicants earnestly believe that the application is now in condition for allowance and because of such, earnestly solicit the Examiner to enter the aforementioned amendments.

5 In particular, based on the foregoing, each of pending claims 1 and 3-25 is in allowable form and the application in condition for allowance, which action is respectfully and expeditiously requested.

The Assistant Commissioner for Patents is hereby authorized to charge any additional fees or credit any excess payment that may associated with this
10 communication, to Deposit Account 04-1679.

Respectfully submitted,

15 Dated: March 23, 2006



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